



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,895	12/28/2004	Katsumi Okayama	075834.00429	2568
33448	7590	07/07/2006	EXAMINER	
ROBERT J. DEPK LEWIS T. STEADMAN ROCKEY, DEPK, LYONS AND KITZINGER, LLC SUITE 5450 SEARS TOWER CHICAGO, IL 60606-6306			WENDLER, ERIC J	
			ART UNIT	PAPER NUMBER
			2824	

DATE MAILED: 07/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/519,895	OKAYAMA ET AL.	
	Examiner	Art Unit	
	Eric Wendler	2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 4/10/06.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 3-8 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1 and 3-8 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 28 December 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input checked="" type="checkbox"/> Other: <u>updated EAST search history</u> . |

DETAILED ACTION

1. This office action is responsive to the following communications: the Amendment after Non-Final Rejection filed on April 14, 2006.
2. Claims 1, 3-8 are pending in the present application. Claims 1, 8, are independent claims.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. JP 2002-202026, filed on July 11, 2002.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1, 4, 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by the US Patent Application Publication of Nakashio et al. (US 2002/0003684).**

6. **Regarding claim 1,** Nakashio et al. teach a magnetic non-volatile memory device provided with magnetic shielding layers **24, 29**, made from a soft magnetic metal (paragraph 0019) formed at a top and bottom region of the device, formed at the mounting side of the device, and the surface opposite the mounting side of the device (Fig. 3, paragraph 0085), for suppressing magnetic

flux into the device, wherein the device includes a plurality of layers between the magnetic shielding layers (Fig. 3), of which at least one of the plurality of layers has the same material of at least one of the magnetic shielding layers. Nakashio et al. teach a fixed magnetization layer 31 comprising a NiFe layer. It is well known in the art, and acknowledged and confirmed by the applicant in page 9, paragraphs 10-15 of the specification, that NiFe is a soft magnetic metal suitable for using in magnetic shielding layers. Therefore, Nakashio et al. teach at least one of the plurality of layers having the same material as at least one of the magnetic shielding layers.

7. **Regarding claims 4, 7,** Nakashio et al. teach a magnetic non-volatile memory device in which the magnetic shielding layers have a composing element which is common to a part of an element of various layers composing the device. As mentioned in the previous paragraph, Nakashio et al. teach a fixed magnetization layer 31 comprising a NiFe layer. This same layer is also comprised of a CoFe layer. The magnetic shielding layers, made of soft magnetic metal NiFe, has Fe as an element in common with various other layers composing the device. Nakashio et al. therefore teach all the claimed elements.

8. **Regarding claim 8,** it is merely a method of making the apparatus of claim 1. Nakashio et al. teach all the claimed elements of claim 1, as discussed above, and describe that the various layers of the magnetic memory device can be formed by sputtering techniques (paragraphs 0083, 0117, 0122, 0125-0127, 0133, 0139, etc.), which implies that these layers could be formed in a single sputtering chamber. The fact that at least one of the plurality of layers has the

same material as at least one of the magnetic shielding layers allows the target for forming the layers to be the same. Nakashio et al. therefore teach all the claimed elements.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the US Patent Application Publication to Nakashio et al. (US 2002/0003684) in view of the US Patent to Yoshikawa (6648990).**

11. Regarding claim 3, Nakashio et al. teach all the claimed elements as discussed above but fail to teach that the magnetic shield layers are formed of a nano-granular structure having a magnetic layer and a non-magnetic layer. Yoshikawa teaches the use of nano-granular structures as being excellent in soft magnetic properties and for use in high frequency magnetic applications (column 1, lines 18-57). It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use the nano-granular materials taught by Yoshikawa in structures that require soft magnetic materials, such as the magnetic shielding layers taught by Nakashio et al.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the US Patent Application Publication to Nakashio et al. (US 2002/0003684) in view of the US Patent to Shouji et al (5,880,910).

13. Regarding claim 5, Nakashio et al. teach all the claimed elements as discussed above but fail to teach a passivation film formed on the magnetic shield layer. Shouji teaches the use of a passivation film coated on top of a composite magnetic head device (column 14, lines 14-15). Passivation layers are well known in the art as a way of protecting the surfaces of metal and mineral layers. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use the passivation layer taught by Shouji to coat the magnetic shield layer taught by Nakashio et al. for the purpose of protecting the magnetic shield layer.

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the US Patent Application Publication to Nakashio et al. (US 2002/0003684) in view of the US Patent to Saito et al (6,717,845).

15. Regarding claim 6, Nakashio et al. teach all the claimed elements as discussed above, but fail to explicitly teach that the magnetic shielding layers are magnetically coupled to each other. Saito teaches a layer of metal-nonmetal nano-granular material covering write-in elements for the purpose of controlling and guiding the magnetic field produced (column 5, lines 43-63; column 6, lines 33-37). It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine the teaching of Saito with the teaching of Nakashio et al. since the covering layer taught by Saito is comprised of the same

metallic-nonmetallic nano-granular material as the magnetic shielding devices taught above by the combination of Nakashio et al. and Yokishawa, and would be ideal for magnetically coupling the two magnetic shielding devices together for the purpose of continued suppression of magnetic flux.

Response to Arguments

16. Applicant's arguments, see Remarks, pages 5-7, filed on April 10, 2006, with respect to the rejection(s) of claim(s) 1, 8, under 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a new prior art reference, the US Patent Application Publication to Nakashio et al. (US 2002/0003684).

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kagami et al. (US 2003/0099069) and Chang et al. (6,943,993) teach magnetic memory structures similar to that of the present invention.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory

Art Unit: 2824

action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wendler whose telephone number is (571) 272-5063. The examiner can normally be reached on Monday - Friday 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



RICHARD ELMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2630

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EJW
6/22/06